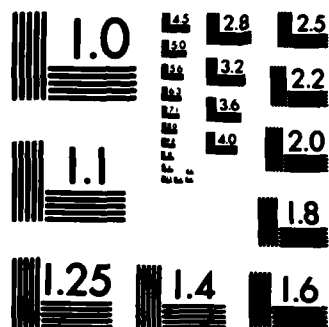


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LIFE CHANGE AND ITS TOLERANCE

R. H. RAHE

REPORT NO. 77-21

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LIFE CHANGE AND ITS TOLERANCE

One of the most distressing aspects of modern day civilization is its inherent technological and sociological change. Indeed, today's changes come upon us so quickly it is nearly impossible for persons to anticipate these conditions and to adequately prepare themselves. Examples of such abrupt changes are the recent restrictions on fuel and water usage. Studies of the adaptative potential of humans to environmental changes are urgently needed for the welfare of this and future generations.)

A model is described for
~~The following model of~~ life change and its tolerance has been derived from the research of the author as well as others working this area.^{1,2} The model serves to categorize five areas of potential future research in the field of stress tolerance.

Perception. It's apparent from several studies that the perceived significance of recent life change events varies greatly between individuals. Intrasubject variability over time has not been well studied. Similarly, the effects of previously experiencing a life change event upon repeated exposure are unclear.³ In our laboratory we have developed a Subjective Life Change Unit (SLCU) scaling methodology to attempt to measure how a particular individual differs from the group norm in terms of his own perceived significance for a particular life change event.³

One dimension strongly influencing how an individual perceives his recent life change is his level of social support.⁴ Job loss, for example, may not be seen as nearly the burden it usually is if the affected person has adequate

family and financial supports, and even unemployment insurance. The positive effects of peer group support for persons undergoing stressful life events are also well known.

Psychological Defenses. A good deal of research needs to be done specifically analyzing the utility of the classical psychological defense mechanisms as "shields" protecting an individual from the full realization of his recent life change events. A few studies have documented defense mechanisms such as repression, isolation, and denial, as effective in protecting individuals from the physiological arousal normally secondary to recent life change--such as being admitted to a coronary care unit in a general hospital.^{1,2} Are other defense mechanisms (intellectualization, sublimation, projection, etc.) equally helpful?

A major obstacle to the study of ego defense mechanisms is that they are primarily employed as part of the characterologic structure of an individual and the person is seldom aware that he is using them. This is in contrast to coping techniques, which are generally learned capacities and performed by a person in full awareness he is doing so. Substantial psychometric work remains to be done on instruments which can measure psychological defenses with acceptable reliability and validity.

Psychophysiological Response. Once recent life change events are perceived by an individual, and not completely shielded by his psychological defense mechanisms, multiple psychophysiological responses are set into motion within his body. The general pattern is one of physiological arousal (e.g., elevated serum cortisol) with a return to homeostatic balance following resolution of the life change. Individuals with unusually strong or prolonged responses appear to be prone to eventual organ system dysfunction under chronic stress situations resulting in body symptoms. If symptomatic, individuals may decide to combat this unpleasant condition through a variety of coping techniques.

Coping Capabilities. The current literature is replete with recent work assessing the value of various coping techniques such as muscle relaxation, meditation, biofeedback, exercise, and various cognitive strategies (minimalization, distraction, avoidance, selective awareness, and so forth) in the suppression of body symptoms.² It remains to be determined if coping techniques such as relaxation or meditation are equal in their capability for lowering blood pressure, for example, as thiazide medication.

A physically conditioned cardiovascular system results in a person having a low resting heart rate along with enhanced cardiovascular tone which suppresses heart rate elevation secondary to physical and/or psychological stresses. Very recent psychological studies have indicated that brain function is impaired at high heart rates.⁵ Therefore, physical conditioning may provide individuals with a coping capability for tolerating highly arousing life stress situations.

In our current studies of naval aviators landing aboard aircraft carriers we are testing the hypothesis that those aviators with conditioned cardiovascular systems, with presumably low heart rates during the stress of landing their aircraft aboard a carrier, will show better landing performance than will non-conditioned pilot control subjects.

Illness Behavior. A concept that has undergone a good deal of previous research is illness behavior. Individuals are not clinically labeled as ill until they admit to symptoms which are sufficiently bothersome to interfere with their life routines. To do so, these persons must have some belief in medical systems. The need for further research in this area is on compliance. It has been estimated that less than half of patients follow a doctor's orders with any degree of regularity. All of medicine's skills are of little avail to persons who subsequently resist adhering to curative and/or preventive measures.

Two final comments. Although there is plentiful demand by graduate students in psychology, sociology, nursing, and medicine to pursue studies attempting to refine life change measurement, it's the feeling of the author that even today efforts in this area have proceeded far ahead of their utility. There is really not much else to measuring life change events than simply counting them.¹⁻³ Studies concerned with identifying positive and negative life changes, desirable and undesirable changes, anticipated and unanticipated changes, and so on, are identifying aspects of individuals perception or coping with life change events rather than measuring dimensions of the changes themselves.

Life change events do not occur over a short period of time. Even events which appear to be discrete in time (divorce, marriage, birth of a child, etc.) are often the final manifestation of evolving life change events covering weeks to months. None the less, biochemical correlates which have been proposed to relate to life change experience often have considerable variability in their values, changing over minutes to hours. To correlate rapidly changing physiological variables with life changes occurring over weeks to months is nearly an impossible task. For research to advance in the field of biochemical correlates of stress we need to develop physiological measures of chronic strain. Perhaps new physiological measures of hormonal "reserve" will be developed to fill this need. Whatever their form, the development of physiological indices of chronic strain are of the highest priority for future progress in this area.

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER 77-21	2. GOVT ACCESSION NO. AD-A130184	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) (U) Life Change and Its Tolerance		5. TYPE OF REPORT & PERIOD COVERED Interim
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Richard H. RAHE		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Naval Health Research Center P.O. Box 85122 San Diego, CA 92138		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS MF51.524.002-5020
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Medical Research & Development Command Bethesda, MD 20 14		12. REPORT DATE May 1977
		13. NUMBER OF PAGES 5
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) Commander, Naval Medical Command Dept of the Navy Washington, DC 20372		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution unlimited.		
18. SUPPLEMENTARY NOTES To be published in: JB Calhoun (ed), <u>Environment and Population: Perspectives of Adaptation</u> . New York: Prager (in press)		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Life Change Stress Tolerance Future research goals		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This commentary outlines future goals in research on life change and its tolerance. Various aspects of stress tolerance are mentioned and examples of future research needs given. These comments will be part of a collection of 170 other opinions as to the future needs of human research. This effort is being organized by Dr. John B. Calhoun of National Institute of Mental Health, Unit for Research on Behavioral Systems, Laboratory of Brain Evolution and Behavior.		

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